IN THE UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF TEXAS WACO DIVISION

Daedalus Blue LLC	Civil Action No. 6:20-cv-00073
Plaintiff,	The Honorable
v. SZ DJI Technology Co., Ltd., & DJI Europe B.V.	COMPLAINT FOR PATENT INFRINGEMENT JURY TRIAL DEMANDED
Defendants.	

COMPLAINT FOR PATENT INFRINGEMENT AND DEMAND FOR JURY TRIAL

TO THE HONORABLE JUDGE OF SAID COURT:

Plaintiff Daedalus Blue LLC ("Daedalus Blue"), files this Complaint for Patent Infringement and Damages against Defendants SZ DJI Technology Co., Ltd. and DJI Europe B.V. (collectively, "DJI" or "Defendants"), and would respectfully show the Court as follows:

PARTIES

- Plaintiff Daedalus Blue is a Delaware limited liability company with its principal place of business located at 51 Pondfield Rd., Suite 3, Bronxville, NY 10708.
- 2. On information and belief, Defendant SZ DJI Technology Co., Ltd. is a Chinese corporation with its principal place of business at 14th Floor, West Wing, Skyworth Semiconductor Design Building, No. 18 Gaoxin South 4th Ave, Nanshan District, Shenzhen, China. On information and belief, Defendant SZ DJI Technology Co., Ltd. is responsible for the development of DJI branded products sold in the United States. Although Defendant is engaged in business in the State of Texas, it has not designated an agent for service of process in the State. The Secretary of State, therefore, is an agent for

- service of process for SZ DJI Technology Co., Ltd. pursuant to TEX. CIV. PRAC. & REM. CODE § 17.044(b).
- 3. On information and belief, Defendant DJI Europe B.V. is a European corporation with its principal place of business at Bijdorp-Oost 6, 2992 LA Barendrecht, Netherlands. On information and belief, DJI Europe B.V. sells DJI branded products in the United States. Although DJI Europe B.V. is engaged in business in the State of Texas, it has not designated an agent for service of process in the State. The Secretary of State, therefore, is an agent for service or process for DJI Europe B.V. pursuant to Tex. CIV. PRAC. & REM. CODE §17.044(b).

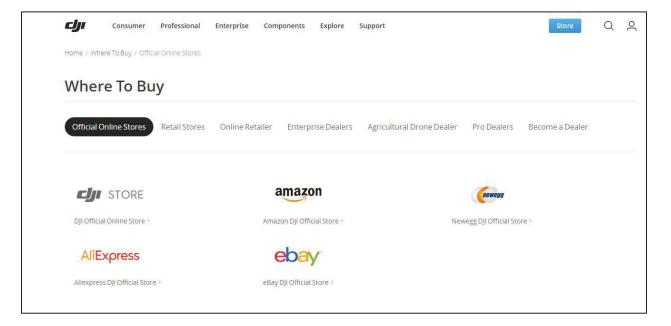
JURISDICTION AND VENUE

- 4. This is a civil action for patent infringement arising under the Patent Laws of the United States as set forth in 35 U.S.C. §§ 271, et seq.
- This Court has federal subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).
- 6. This Court has personal jurisdiction over Defendants pursuant to Tex. CIV. PRAC. & REM. CODE § 17.041 *et seq*. General personal jurisdiction exists over Defendants because Defendants have minimum contacts with this forum as a result of business regularly conducted within the State of Texas and within this district, and, on information and belief, specific personal jurisdiction exists because Defendants have, at least, committed the tort of patent infringement within Texas and this district. Personal jurisdiction also exists because, on information and belief, Defendants have: (1) operated the Internet website, https://www.dji.com/, which is available to and accessed by users, customers, and potential customers of the Defendants within this judicial district; (2) sold

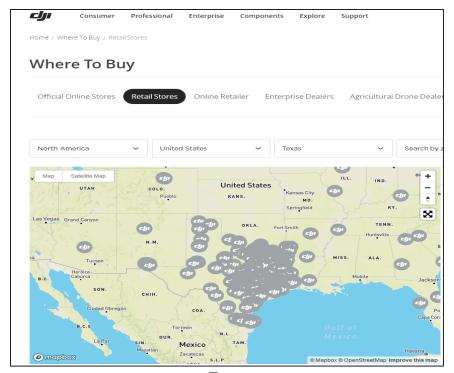
Defendants' drone and drone-related products within this judicial district; (3) transacted business within the State of Texas; (4) actively infringed and/or induced infringement in Texas; (5) established regular and systematic business contacts within the State of Texas; and (6) continue to conduct such business in Texas through the sale of Defendants' drone and drone-related products. Accordingly, this Court's jurisdiction over the Defendants comports with the constitutional standards of fair play and substantial justice and arises directly from the Defendants' purposeful minimum contacts with the State of Texas.

- 7. This Court also has personal jurisdiction over Defendants because, on information and belief, DJI and its authorized resellers (or those acting on their behalf) and DJI's customers committed and continue to commit acts of patent infringement in this judicial district. Defendants transact business within the State of Texas and in this judicial district and have committed acts of patent infringement within the State of Texas and this judicial district as set forth hereinafter. Such business includes, without limitation, Defendants' operation of the Internet website, https://www.dji.com/, which is available to and accessed by users, customers, and potential customers of the Defendants within this judicial district, and the sale of Defendants' drone and drone-related products within this judicial district, both online at http://store.dji.com and through other official online stores, resellers/retail stores, and varied dealers within this jurisdiction, as provided at https://www.dji.com/where-to-buy/.
- 8. In addition to Defendants' own online store at http://store.djj.com, Defendants have also sold their drone and drone-related products within this judicial district via the following means:

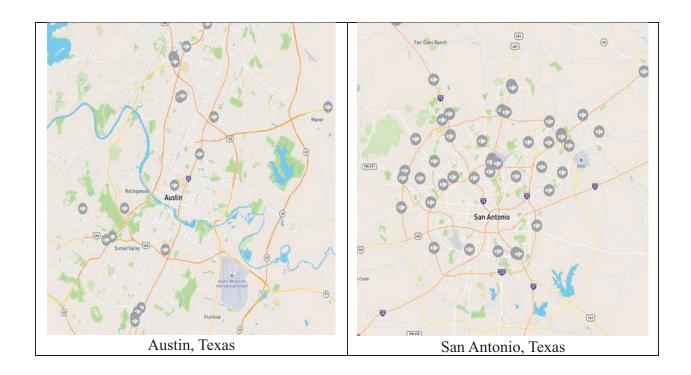
a. Defendants have official online stores with Amazon, Newegg, AliExpress, and eBay, all of which are available to and accessed by users, customers, and potential customers of the Defendants within this judicial district.



b. In addition to official online stores, Defendants have a wide variety of resellers selling Defendants' drones and drone-related products within this judicial district.

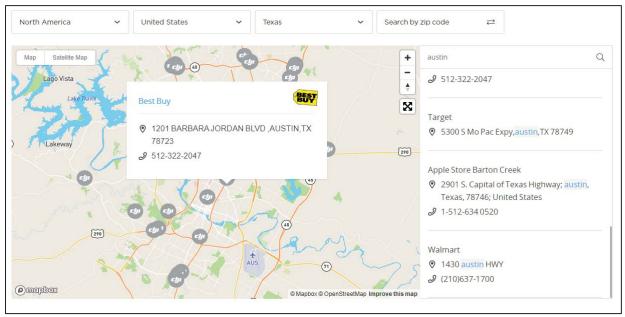


Texas

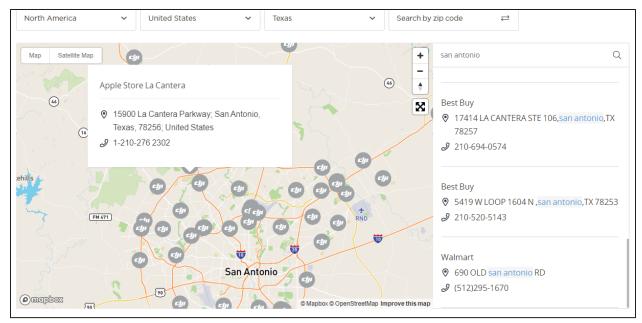




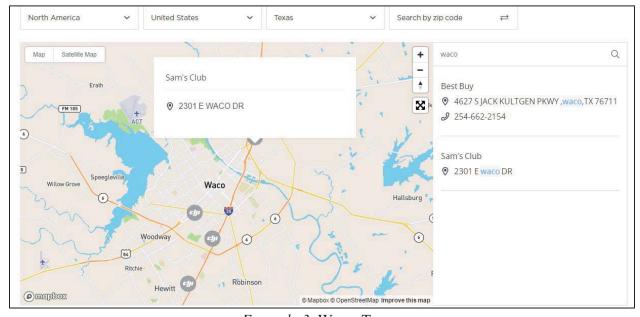
Such resellers/retail stores include companies such as Walmart, Best Buy, Sam's Club, Target, and Apple Store.



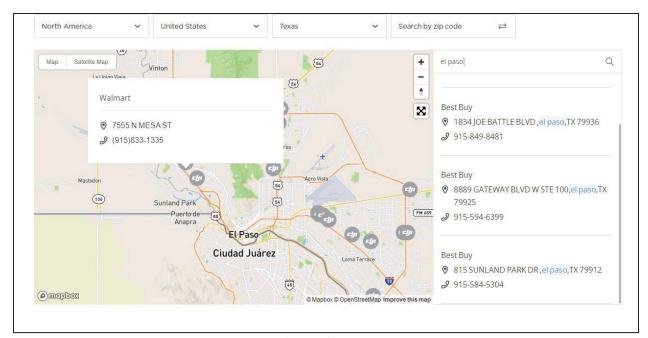
Example 1: Austin, Texas



Example 2: San Antonio, Texas

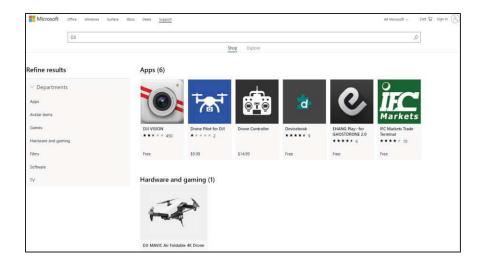


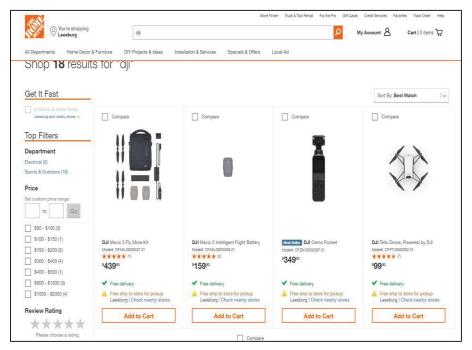
Example 3: Waco, Texas



Example 4: El Paso, Texas

c. Defendants have also authorized over 80 online retailers, as listed at https://www.dji.com/where-to-buy/online-retails, and have extended warranties to products purchased from the authorized DJI Dealers. Such authorized dealers include those companies listed above (e.g. Walmart and Sam's Club) and many more (e.g. Microsoft, BJ's, Gamestop, Home Depot, Verizon Wireless, etc.). Most, if not all, of these online retailers are available to and accessed by users, customers, and potential customers of the defendant within this judicial district.





d. Defendants also have 25 designated professional dealers operating in the United States, all of which have online stores through which to sell Defendants' drones and drone-related products, which are available to and accessed by users, customers, and potential customers of the Defendants within this judicial district. A complete list of professional dealers can be found at: https://www.dji.com/where-tobuy/professional-dealers.

- e. On information and belief, relying in part on evidence presented in ¶ 8(b), DJI maintains a regular and established place of business with a significant physical presence in this judicial district, with a substantial amount of authorized resellers located within the district, as represented by information presented on: Austin, Texas; San Antonio, Texas; Waco, Texas; and El Paso, Texas. This information presented is not wholly representative of all authorized resellers located within the Western District of Texas, but merely demonstrative.
- 9. Venue is proper in this Court under 28 U.S.C. §§ 1391(b) and (c) and 28 U.S.C. § 1400(b) based on the information and belief that the Defendants have committed or induced acts of infringement, and/or advertise, market, sell, and/or offer to sell products, including infringing products, in this judicial district, as discussed above.

THE PATENTS-IN-SUIT

- 10. On June 5, 2007, United States Patent No. 7,228,232 ("the '232 patent"), entitled "Navigating a UAV with Obstacle Avoidance Algorithms," was duly and legally issued by the United States Patent and Trademark Office ("USPTO") to William Kress Bodin, Jesse Redman, and Derral Charles Thorson, with the International Business Machines Corporation ("IBM") as assignee. A copy of the '232 patent is attached hereto as Exhibit A.
- 11. On June 12, 2007, United States Patent No. 7,231,294 ("the '294 patent"), entitled "Navigating a UAV," was duly and legally issued by the USPTO to William Kress Bodin, Jesse J. W. Redman, and Derral C. Thorson, with IBM as assignee. A copy of the '294 patent is attached hereto as **Exhibit B**.

- 12. On October 23, 2007, United States Patent No. 7,286,913 ("the '913 patent"), entitled "Navigating a UAV with Telemetry Through a Socket," was duly and legally issued by the USPTO to William Kress Bodin, Jesse J. W. Redman, and Derral C. Thorson, with IBM as assignee. A copy of the '913 patent is attached hereto as **Exhibit C**.
- 13. The '232, '294, and '913 patents are referred to hereinafter as "the Daedalus Blue Patents."
- 14. Plaintiff Daedalus Blue LLC is the owner of the entire right, title, and interest in and to the Daedalus Blue Patents, with the right to sue in its own name. The Daedalus Blue Patents were initially assigned by IBM to Daedalus Group LLC on or about September 30, 2019. The respective assignments were recorded on November 14, 2019, at the U.S. Patent and Trademark Office. Daedalus Group LLC then assigned the patents to Daedalus Blue LLC, on or about January 24, 2020. The respective assignments were recorded on or about January 29, 2020, at the U.S. Patent and Trademark Office.
- 15. Each of the Daedalus Blue Patents are presumed valid under 35 U.S.C. § 282.
- 16. All patents-in-suit relate to innovative technology for piloting, controlling, navigating, and optimizing flight missions for unmanned aerial vehicles ("UAV" or "drone").

United States Patent No. 7,228,232

17. The '232 patent claimed UAV obstacle avoidance technologies that anticipate the future position of the UAV through GPS sequencing, and avoid obstacles in dependence of that anticipated future position. Such obstacles may be physical three-dimensional objects such as buildings, mountains, and others that will occur to those of skill in the art; or two and three-dimensional geographic areas such as a no-fly zone. In the present complaint, Defendants' suite of drones and drone-related products (infra¶ 30) infringe on this

inventive aspect of the '232 patent. Representative of this infringement is Defendants' Phantom Series drones, including, but not limited to, the Phantom 4 Pro V2.0. The Phantom 4 Pro V2.0 houses a GPS module on-board, which transmits UAV location and flight control instructions back and forth from the UAV user's remote-control device, and vice versa. In so doing, the GPS module tracks the UAV location and ensures the UAV is not entering a restricted zone and/or no fly zones. The Phantom 4 Pro V2.0, and other infringing UAVs described in later paragraphs, is designed to avoid these zones, either notifying the UAV user that the UAV is entering a zone or even disallowing take-off within a zone. Such functionality is within Defendants' "Fly Safe" technology, as described at: https://www.dji.com/flysafe. All intelligent flight features are affected when DJI aircraft fly nearby or into GEO Zones. Such interference includes, but is not limited to, decreased speed, takeoff failure, and flight termination.

18. The '232 patent overcomes shortcomings in the prior art, which required conventional UAV operators to manually control the flight using the camera images from the UAV that were provided to the operator through downlink telemetry (col. 1, lines 18-23). Certain of the inventive aspects of the '232 patent addressed the need for improvements in the area of UAV navigation, by automating certain aspects of the UAV mission (col. 1, lines 26-30). More specifically, the inventive aspects of automatically identifying and avoiding obstacles that would otherwise disrupt the flight of the UAV (col. 17, lines 66-67), were not well-understood, routine, or conventional at the time of the invention.

United States Patent No. 7,231,294

19. The '294 patent claims UAV navigation technologies that maps a UAV's position, from starting position and through waypoints, for a UAV user on a GUI map on a remote-

control device. In the present complaint, Defendants' suite of drones and drone-related products (*infra* ¶ 30) infringe on this inventive aspect of the '294 patent. Representative of this infringement is Defendants' Matrice Series, including, but not limited to the Matrice 200. The Matrice 200 functions with DJI's "FlightHub," the "DJI GO 4" application, "DJI GS Pro" application, and the "DJI Ground Station" application to map the UAVs' position from the start of a mission, through mission waypoints, and to the end of a mission. For example, the Matrice 200, and other infringing products described in later paragraphs, use the DJI GO 4 application, which provides an "Intelligent Flight Mode" that maps the waypoints and starting position of a UAV's mission through a GUI map and remote-control device.

20. The '294 patent overcomes shortcomings in the prior art, which required conventional UAV operators to manually control the flight using the camera images from the UAV that were provided to the operator through downlink telemetry (col. 1, lines 17-20). Certain of the inventive aspects of the '294 patent addressed the need for improvements in the area of UAV navigation, by automating certain aspects of the UAV mission (col. 1, lines 24-28). More specifically, the inventive aspects of automatically selecting waypoints using a mouseclick or joystick button click, to control the flight path of the UAV (col. 1, lines 33-36), were not well-understood, routine, or conventional at the time of the invention. Moreover, the ability to upload multiple waypoints enabled more complex missions to be performed with just a few keystrokes or mouseclicks on the remote control device (col. 1, lines 57-59 and col. 2, lines 2-4), which was also not well-understood, routine, or conventional at the time of the invention.

United States Patent No. 7,286,913

- 21. The '913 patent claims UAV navigation technologies for downlink telemetry of the UAV to the user's remote-control device, which then uplinks telemetry and flight control instructions to the UAV through a socket. Here, a socket is an end-point of a two-way communication link between two application programs running on a network. This communication link pairs the user's remote-control device, or controller, with the drone or UAV to enable the user to operate the UAV. In some instances, a socket on a UAV would be considered a server-side socket, and a socket on a remote-control device may be considered a client socket. In the present complaint, Defendants' suite of drones and drone-related products (*infra* ¶ 30) infringe on this inventive aspect of the '913 patent. Representative of this infringement is Defendants' Mavic Series drones, including, but not limited to the Mavic 2 Pro. The Mavic 2 Pro houses a receiver/transmitter on-board, which serves as the server-side socket transmitting downlink telemetry to the UAV user's remote-control device through one or more application programs, including, but not limited to the DJI GO 4 application or the DJI GS Pro application (depending on the user's selection). Then using the selected remote-control device application, which may serve as the client socket, uplink telemetry and flight control instructions are transmitted back to the UAV.
- 22. The '913 patent overcomes shortcomings in the prior art, which required conventional UAV operators to manually control the flight using the camera images from the UAV that were provided to the operator through downlink telemetry (col. 1, lines 18-21). Certain of the inventive aspects of the '913 patent addressed the need for improvements in the area of UAV navigation, by automating certain aspects of the UAV mission (col. 1, lines 25-

28). More specifically, the inventive aspects of automatically selecting waypoints using a mouseclick or joystick button click, to control the flight path of the UAV (col. 1, lines 33-35), were not well-understood, routine, or conventional at the time of the invention. Moreover, the ability to upload multiple waypoints enabled more complex missions to be performed with just a few keystrokes or mouseclicks on the remote control device (col. 1, lines 64-67 and col. 2, lines 1-2, 10-11), and the use of a socket to facilitate communications between the UAV and the remote control device (col. 2, lines 34-37), were also not well-understood, routine, or conventional at the time of the invention.

COUNT I PATENT INFRINGEMENT OF THE '232 PATENT

- 23. Plaintiff Daedalus Blue repeats and realleges the above paragraphs, which are incorporated by reference as if fully restated herein.
- 24. Plaintiff Daedalus Blue is the owner of all rights, title, and interest in the '232 patent.
- 25. Plaintiff Daedalus Blue and predecessors in interest have never licensed any of the Defendants under the '232 patent, nor has Plaintiff Daedalus Blue otherwise authorized any of the Defendants to practice any part of the '232 patent.
- 26. The '232 patent is presumed valid under 35 U.S.C. §282.
- 27. The '232 patent relates to, among other things, navigation technology that enables obstacle avoidance by UAVs.
- 28. On information and belief, Defendants manufacture and market DJI branded products.
 Exhibit D.
- 29. On information and belief, Defendants distribute, sell, and market such DJI branded products, as well as remote controls, parts, and accessories for such DJI branded products. **Exhibit E**.

- 30. Direct Infringement: On information and belief, Defendants have directly infringed and continue to directly infringe, either literally or under the doctrine of equivalents, one or more claims of the '232, including for example (but not limited to) at least method claims 1-6, system claims 7-12, and computer program product claims 13-18 of the '232 patent by making, using, selling, offering to sell, or importing without license or authority, Defendants' suite of infringing drone and drone-related products, including, but not limited to, at least DJI products that correspond to DJI branded model lines including the Matrice 200 Series V2 (Matrice 200 V2, Matrice 210 V2); the Matrice 200 Series (Matrice 200, Matrice 210, Matrice 210RTK), Matrice 600 Pro, Matrice 600, Matrice 100; the Inspire Series (Inspire 1, Inspire 1Pro/Raw, Inspire 2); the Mavic 2 Enterprise Series (Mavic 2 Enterprise, Mavic 2 Enterprise Dual); the Mavic Series (Mavic Mini, Mavic 2 Pro, Mavic 2 Zoom, Mavic Air, Mavic Pro Platinum); P4Multispectral; Phantom 4 RTK; the Phantom 4 Series (Phantom 4 Pro V2.0, Phantom 4 Advanced, Phantom 4 Pro, Phantom 4) (hereinafter "Defendants' UAVs"); and the DJI GO application, DJI GO 4 application, DJI GS Pro application, DJI Terra application and FlightHub application, together with their compatible controllers (hereinafter "Defendants" "Flight Control Components"), without Plaintiff Daedalus Blue's authorization, in violation of 35 U.S.C. §271(a). See Exhibit F (depicting specifications, instruction manuals, and downloads of products for all Defendants' UAVs and Defendants' Flight Control Components). A detailed infringement claim mapping is provided in paragraphs 42-50 below.
- 31. On information and belief, Defendants have been aware of the '232 patent since at least June 19, 2014. The '232 patent is well known in the industry having been cited in at

least 95 cited patents since its filing date, including in at least 17 of Defendants' own patents:

Patent Number	Patent Title
US9483950	Flight control for flight-restricted regions
US10029789	Context-based flight mode selection
US20160068267	Context-based flight mode selection
US20160070264	Velocity control for an unmanned aerial vehicle
WO2016033795	Velocity control for an unmanned aerial vehicle
US9317036	Flight control for flight-restricted regions
US9592911	Context-based flight mode selection
US9604723	Context-based flight mode selection
US9625907	Velocity control for an unmanned aerial vehicle
US9625909	Velocity control for an unmanned aerial vehicle
US9704408	Flight control for flight-restricted regions
US9842505	Flight control for flight-restricted regions
US10001778	Velocity control for an unmanned aerial vehicle
US10240930	Sensor Fusion
US20160070265	Multi-sensor environmental mapping
US10429839	Multi-sensor environmental mapping
US10421543	Context-based flight mode selection

With this in mind, in accordance with 35 U.S.C. §287(a), Defendants had constructive and actual notice of the existence of the '232 patent and have been aware of the '232 patent since at least June 19, 2014, when Defendants cited the '232 patent to the United States Patent and Trademark Office in an Information Disclosure Statement (PTO/SB/08b) as being material to the patentability of Defendants' own patent, U.S. Patent No. 9,317,036 (*italicized above*).

32. **Induced Infringement:** On information and belief, Defendants have and continue to promote, advertise, and instruct customers and potential customers about DJI products, such as Defendants' UAVs and Defendants' Flight Control Components (*see* ¶ 30), and how to use DJI branded products, including infringing uses. Defendants' promotion, advertising, and instruction efforts include, at a minimum, maintenance of its own website http://www.dji.com, as well as support via third party resellers. *See* **Exhibit G**.

- 33. Contributory Infringement: On information and belief, Defendants knew or should have known that at least DJI branded model lines identified above in Paragraph 30 utilize flight planning and control programs implementing "Obstacle Avoidance Algorithms" that aid the user of the Defendants' products, as the products autonomously avoid obstacles by GPS based avoidance of two- or three-dimensional geographic areas (e.g. no fly zones or restricted zones) or three-dimensional physical objects. Such obstacle avoidance algorithms, stored both on-board Defendants' UAVs and within Defendants' applications, such as the DJI GO 4 Application and the DJI GS Pro Application, are especially made or especially adapted for use in an infringement of at least claims 1-18 of the '232 patent and have no substantially non-infringing uses in these drone and drone-related products.
- 34. On information and belief, the portions of Defendants' products that allow the user to pilot the Defendants' products in accordance with a selected obstacle avoidance algorithm as described in Paragraph 30, including DJI branded products made, marketed, used, sold, offered to sell, or imported by Defendants, are not staple articles or commodities of commerce suitable for substantial non-infringing use.

- 35. **Willful Infringement:** As set forth in paragraph 31 above, in accordance with 35 U.S.C. §287(a), Defendants had constructive and actual notice of the existence of the '232 patent, and have been aware of the '232 patent since at least June 19, 2014, when Defendants cited the '232 patent to the United States Patent and Trademark Office in an Information Disclosure Statement.
- 36. On information and belief, the International Business Machines Corporation ("IBM"), a past predecessor in interest of the '232 patent, and Defendants engaged in discussions regarding the '232 patent, on or about October 16, 2017, if not earlier since the October 16, 2017 remarks referenced prior written exchanges between IBM and DJI. Therefore, Defendants also had actual knowledge of the '232 patent at least as of October 16, 2017. And yet, even with full knowledge of Daedalus Blue's patent rights (acquired through IBM), Defendants have continued to commit acts of infringement and have failed to cease their infringing activities. Because Defendants have been aware of the '232 patent, but acted despite an objectively high likelihood that their actions constituted infringement of a valid patent, Defendants' infringement has been, and continues to be, egregious and willful.
- 37. **Detailed Mapping of Direct Infringement:** On information and belief, with regard to the claim elements of the '232 patent, the DJI Mavic Series, Matrice Series, Phantom Series, Spark Series, Multispectral Series, and Inspire Series, as further laid out in Paragraph 30, function similarly to each other. Infringement of the '232 patent by these DJI drones and drone-related products is demonstrated below using the Mavic Series UAV (including the Mavic 2 Pro) as an example. Method claims 1-6 of the '232 patent

are representative of, and are of similar scope to system claims 7-12 and computer program product claims 13-18 of the '232 patent.

- 38. Method claim 1 is representative of the alleged claims:
 - 1. A method for navigating a UAV, the method comprising:

piloting the UAV, under control of a navigation computer, in accordance with a navigation algorithm;

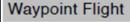
while piloting the UAV:

reading from a GPS receiver a sequence of GPS data;

anticipating a future position of the UAV in dependence upon the sequence of GPS data;

identifying an obstacle in dependence upon the future position; selecting an obstacle avoidance algorithm; and piloting the UAV in accordance with the selected obstacle avoidance algorithm.

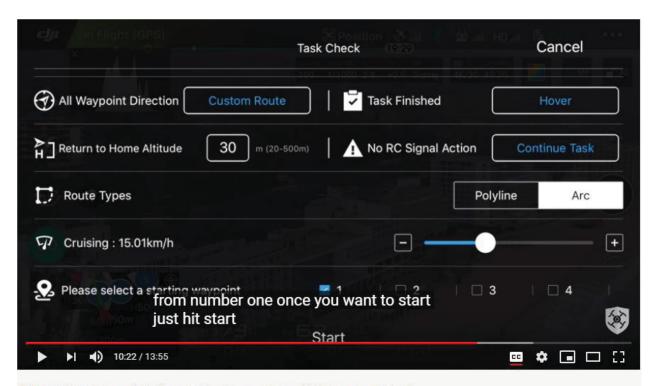
- 39. On information and belief, the Mavic Series UAV ("Mavic") performs a method for navigating an unmanned aerial vehicle ("UAV").
- 40. On information and belief, the Mavic pilots the UAV under control of a navigation computer, in accordance with a navigation algorithm.





Set a waypoint flight path, define waypoint actions then start flying with a tap.

User's Manual, DJI GS Pro at p. 6



WAYPOINTS 2.0 on DJI Mavic 2 Pro/Zoom Tutorial (FW Update 0.300)

https://www.youtube.com/watch?v=nWCbdMqfrE4

Introduction

DJI GS Pro (also known as Ground Station Pro) is an iPad app designed for industrial applications including but not limited to, aerial imaging, architecture, precision agriculture, electrical inspections, search and rescue, safety control, and more. It provides easy mission planning through different methods such as tapping on the map, setting points using the aircraft, or importing files, and automated aircraft control during the planned mission. DJI GS Pro is compatible with the iPad product line and many DJI aircraft, flight controllers, cameras and accessories*.

DJI GS Pro of v2.0 or above supports individual and team aircraft operations. Additionally, the subscription feature allows for flight, team, and project data to be backed up on the Cloud server.

Choose Point Set Method

There are several methods for setting Virtual Fence boundaries, PhotoMap or 3D Map Area, building radius, and flight radius for 3D Map POI or flight waypoints. Once the points are confirmed, up to 99 waypoints can be included with the generated flight path. If the number of waypoints exceeds this, the mission will fail.



User's Manual, DJI GS Pro at p. 5 and p. 18

Start to Fly

Tap "Start to fly" at the bottom of the checklist when ready. An aircraft's actions will vary depending on its mission. The Aircraft Status Bar will show the current aircraft status, mission progress, etc.



Virtual Fence

After starting, if the aircraft's latitude, longitude or altitude is outside of the fence boundaries, there will be visual and audio prompts on the iPad. The Virtual Fence will be disabled at this time and the aircraft can be flown freely. The Virtual Fence will be automatically enabled when the aircraft enters fence boundaries. Once inside, if the aircraft approaches the boundaries of the fence, it will slow to a hover and audio prompts will sound from the iPad.

PhotoMap / 3D Map / Waypoint Flight

After starting, the aircraft will fly to the start point automatically. In 3D Map POI, the altitude of the start point will be the preset maximum altitude.

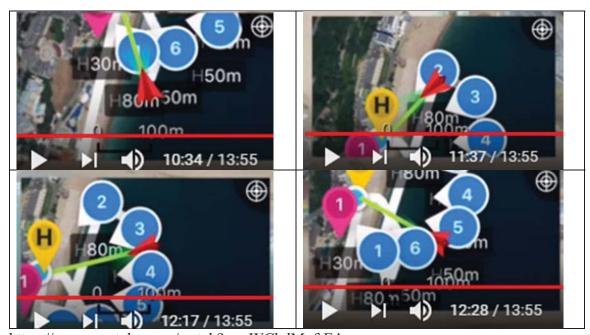
20 © 2018 DJI All Rights Reserved.

User's Manual, DJI GS Pro at p. 20

41. On information and belief, the Mavic, while piloting the UAV, reads from a GPS receiver a sequence of GPS data.

Specifications	
Aircraft	
Takeoff Weight	907 g (Mavic 2 Pro); 905 g (Mavic 2 Zoom)
Dimensions	Folded: 214×91×84 mm (length×width×height) Unfolded: 322×242×84 mm (length×width×height)
Diagonal Distance	354 mm
Max Ascent Speed	5 m/s (S-mode), 4 m/s (P-mode)
Max Descent Speed	3 m/s (S-mode), 3 m/s (P-mode)
Max Speed	72 km/h (S-mode) (near sea level, no wind)
Max Service Ceiling Above Sea Level	6000 m
Max Flight Time	31 minutes (at a consistent 25 kph, no wind)
Max Hovering Time	29 minutes (no wind)
Overall Flight Time	25 minutes (In normal flight, 15% remaining battery level)
Max Flight Distance	18 km (at a consistent 50 kph, no wind)
Max Wind Speed Resistance	29–38 kph
Max Tilt Angle	35° (S-mode, with remote controller), 25° (P-mode)
Max Angular Velocity	200°/s
Operating Temperature Range	-10°C - 40°C
GNSS	GPS+GLONASS

User's Manual, Mavic 2 Pro/Zoom at p. 62



https://www.youtube.com/watch?v=nWCbdMqfrE4

42. On information and belief, the Mavic anticipates a future position of the UAV in dependence upon the sequence of GPS data.

Failsafe RTH

The aircraft allows the aircraft to create a real-time map of its flight route as it flies. If the Home Point was successfully recorded and the compass is functioning normally, Failsafe RTH automatically activates after the remote control signal is lost for more than two seconds.

When Failsafe RTH is activated, the aircraft starts to retrace its original flight route home. If the remote control signal is re-established within 60 seconds of Failsafe RTH being activated, the aircraft hovers at its present location for 10 seconds and waits for pilot commands. The user may tap ⊗ in the DJI GO 4 or press the RTH button on the remote controller to cancel Failsafe RTH and retake control. If no pilot command is given, the aircraft flies to the Home Point in a straight line. If the remote control signal is still lost 60 seconds after activating Failsafe RTH, the aircraft stops retracing its original flight route and flies to Home Point in a straight line.



- If the aircraft is further than 2 km or less than 50 m from the Home Point when RTH begins, the aircraft will not retrace the original flight route and instead flies in a straight line to the Home Point
- . Note that GEO zones will affect the ability of the aircraft to retrace the original flight route.
- After detecting obstacles during flight, the aircraft stops retracing the original flight route and instead flies in a straight line to the Home Point.

User's Manual, Mavic 2 Pro/Zoom at p. 17

43. On information and belief, the Mavic identifies an obstacle in dependence upon the future position.

Failsafe RTH

The aircraft allows the aircraft to create a real-time map of its flight route as it flies. If the Home Point was successfully recorded and the compass is functioning normally, Failsafe RTH automatically activates after the remote control signal is lost for more than two seconds.

When Failsafe RTH is activated, the aircraft starts to retrace its original flight route home. If the remote control signal is re-established within 60 seconds of Failsafe RTH being activated, the aircraft hovers at its present location for 10 seconds and waits for pilot commands. The user may tap 🚷 in the DJI GO 4 or press the RTH button on the remote controller to cancel Failsafe RTH and retake control. If no pilot command is given, the aircraft flies to the Home Point in a straight line. If the remote control signal is still lost 60 seconds after activating Failsafe RTH, the aircraft stops retracing its original flight route and flies to Home Point in a straight line.



- . If the aircraft is further than 2 km or less than 50 m from the Home Point when RTH begins, the aircraft will not retrace the original flight route and instead flies in a straight line to the Home
- . Note that GEO zones will affect the ability of the aircraft to retrace the original flight route.
- · After detecting obstacles during flight, the aircraft stops retracing the original flight route and instead flies in a straight line to the Home Point.

User's Manual, Mavic 2 Pro/Zoom at p. 17

44. On information and belief, the Mavic selects an obstacle avoidance algorithm.

Failsafe RTH

The aircraft allows the aircraft to create a real-time map of its flight route as it flies. If the Home Point was successfully recorded and the compass is functioning normally, Failsafe RTH automatically activates after the remote control signal is lost for more than two seconds.

When Failsafe RTH is activated, the aircraft starts to retrace its original flight route home. If the remote control signal is re-established within 60 seconds of Failsafe RTH being activated, the aircraft hovers at its present location for 10 seconds and waits for pilot commands. The user may tap 🛇 in the DJI GO 4 or press the RTH button on the remote controller to cancel Failsafe RTH and retake control. If no pilot command is given, the aircraft flies to the Home Point in a straight line. If the remote control signal is still lost 60 seconds after activating Failsafe RTH, the aircraft stops retracing its original flight route and flies to Home Point in a straight line.



- ♠ If the aircraft is further than 2 km or less than 50 m from the Home Point when RTH begins, the aircraft will not retrace the original flight route and instead flies in a straight line to the Home
 - Note that GEO zones will affect the ability of the aircraft to retrace the original flight route.
 - After detecting obstacles during flight, the aircraft stops retracing the original flight route and instead flies in a straight line to the Home Point.

User's Manual, Mavic 2 Pro/Zoom at p. 17

45. On information and belief, the Mavic pilots the UAV in accordance with the selected obstacle avoidance algorithm.

Failsafe RTH

The aircraft allows the aircraft to create a real-time map of its flight route as it flies. If the Home Point was successfully recorded and the compass is functioning normally, Failsafe RTH automatically activates after the remote control signal is lost for more than two seconds.

When Failsafe RTH is activated, the aircraft starts to retrace its original flight route home. If the remote control signal is re-established within 60 seconds of Failsafe RTH being activated, the aircraft hovers at its present location for 10 seconds and waits for pilot commands. The user may tap ⊗ in the DJI GO 4 or press the RTH button on the remote controller to cancel Failsafe RTH and retake control. If no pilot command is given, the aircraft flies to the Home Point in a straight line. If the remote control signal is still lost 60 seconds after activating Failsafe RTH, the aircraft stops retracing its original flight route and flies to Home Point in a straight line.



- If the aircraft is further than 2 km or less than 50 m from the Home Point when RTH begins, the aircraft will not retrace the original flight route and instead flies in a straight line to the Home Point
- · Note that GEO zones will affect the ability of the aircraft to retrace the original flight route.
- After detecting obstacles during flight, the aircraft stops retracing the original flight route and instead flies in a straight line to the Home Point.

User's Manual, Mavic 2 Pro/Zoom at p. 17

- 46. On information and belief, Defendants' actions have and continue to constitute active inducement and contributory infringement of at least claims 1-6, 7-12, and 13-18 of the '232 patent in violation of 35 U.S.C. §271(b) and 271(c).
- 47. As a result of Defendants' infringement of at least claims 1-6, 7-12, and 13-18 of the '232 patent, Plaintiff Daedalus Blue has suffered monetary damages in an amount yet to be determined, and will continue to suffer damages in the future unless Defendants' infringing activities are enjoined by this Court.
- 48. Defendants' wrongful acts have damaged and will continue to damage Plaintiff Daedalus Blue irreparably, and Plaintiff has no adequate remedy at law for those wrongs and injuries. In addition to its actual damages, Plaintiff Daedalus Blue is entitled to a

permanent injunction restraining and enjoining Defendants and their respective agents, servants, and employees, and all person acting thereunder, in concert with, or on its behalf, from infringing at least claims 1-6, 7-12, and 13-18 of the '232 patent.

COUNT II PATENT INFRINGEMENT OF THE '294 PATENT

- 49. Plaintiff Daedalus Blue repeats and realleges the above paragraphs, which are incorporated by reference as if fully restated herein.
- 50. Plaintiff Daedalus Blue is the owner of all rights, title, and interest in the '294 patent.
- 51. Plaintiff Daedalus Blue and predecessors in interest have never licensed any of the Defendants under the '294 patent, nor has Plaintiff Daedalus Blue otherwise authorized any of the Defendants to practice any part of the '294 patent.
- 52. The '294 patent is presumed valid under 35 U.S.C. § 282.
- 53. The '294 patent relates to, among other things, navigation technology that enables a user to pilot a UAV through use of a remote-control device with a Graphical User Interface (GUI) map.
- 54. On information and belief, Defendants manufacture and market DJI branded products.
 Exhibit D.
- 55. On information and belief, Defendants distribute, sell, and market such DJI branded products, as well as remote controls, flight planning and control programs, parts, and accessories for such DJI branded products. **Exhibit E**.
- 56. **Direct Infringement:** On information and belief, Defendants have directly infringed and continue to directly infringe, either literally and/or under the doctrine of equivalents, at least method claims 1-11, system claims 12-22, and computer program product claims 23-33 of the '294 patent by making, using, selling, offering to sell, or importing without

license or authority, Defendants' suite of drone and drone-related products, including, but not limited to, at least DJI products that correspond to Defendants' UAVs and Defendants' Flight Control Components (*see* ¶ 30), without Plaintiff Daedalus Blue's authorization, in violation of 35 U.S.C. §271(a). *See* Exhibit F. A detailed infringement claim mapping is provided in paragraphs 70-77 below.

57. On information and belief, Defendants have been aware of the '294 patent since at least February 11, 2015. The '294 patent is well known in the industry – having been cited in at least 70 cited patents since its filing date, including in at least 16 of Defendants' own patents:

Patent Number	Patent Title
US9483950	Flight control for flight-restricted regions
US10029789	Context-based flight mode selection
US20150254988	Flight control for flight-restricted regions
US20160068267	Context-based flight mode selection
US20160070264	Velocity control for an unmanned aerial vehicle
US9317036	Flight control for flight-restricted regions
US9592911	Context-based flight mode selection
US9604723	Context-based flight mode selection
US9625907	Velocity control for an unmanned aerial vehicle
US9625909	Velocity control for an unmanned aerial vehicle
US9704408	Flight control for flight-restricted regions
US9842505	Flight control for flight-restricted regions
US10001778	Velocity control for an unmanned aerial vehicle
US10240930	Sensor Fusion
US10429839	Multi-sensor environmental mapping
US10421543	Context-based flight mode selection

With this in mind, in accordance with 35 U.S.C. §287(a), Defendants had constructive and actual notice of the existence of the '294 patent and have been aware of the '294 patent since at least February 11, 2015, because on that date, the United States Patent and Trademark Office cited the '294 patent to reject the patentability of Defendants' own patent, U.S. Patent No. 9,317,036 (*italicized above*).

- 58. Induced Infringement: On information and belief, Defendants have and continue to promote, advertise, and instruct customers and potential customers about DJI products, such as Defendants' UAVs and Defendants' Flight Control Components (see ¶ 30), and how to use DJI branded products, including infringing uses. Defendants' promotion, advertising, and instruction efforts include, at a minimum, maintenance of its own website http://www.dji.com, as well as support via third party resellers. See Exhibit G. Defendants also provided mission planning and control applications for mobile computing devices, such as smartphones, laptops and tablets, which allows consumers to use the infringing features of the products. Such applications include, but are not limited to, Defendants' Flight Control Components (see ¶ 30), which allow users to control the gimbal, camera, navigation, and other aircraft functions of the infringing UAV products. On information and belief, Defendants engaged in these acts with the actual intent to cause the acts which they knew or should have known would induce actual infringement.
- 59. Contributory Infringement: On information and belief, Defendants knew or should have known that at least DJI branded model lines identified above in Paragraph 30 utilize at least four mission planning and UAV control programs implementing "Navigation Algorithms" that allow the user to control the Defendants' product by means of a remote control with GUI map pixels representing waypoints: (1) the DJI GO 4 application, (2) the DJI GS Pro application, (3) DJI Terra, or (4) DJI FlightHub. Such navigation algorithms are especially made or especially adapted for use in an infringement of at least method claims 1-11, system claims 12-22, and computer program product claims 23-33 of the '294 patent and have no substantially non-infringing uses in these drone and drone-related products.

- 60. On information and belief, the portions of Defendants' products that allow the user to pilot the Defendants' products in accordance with a navigation algorithm as described in Paragraph 59, including DJI branded products made, marketed, used, sold, offered to sell, or imported by Defendants, are not staple articles or commodities of commerce suitable for substantial non-infringing use.
- 61. On information and belief, DJI drones and drone-related products listed above were sold with remote-control devices equipped with, or able to be equipped with, GUI mapping. Such remote-control devices could also be purchased separately from the DJI drone and drone-related products. Additionally, users of the DJI drone and drone-related products could download and install DJI brand applications and software (DJI GO 4, DJI Terra, DJI FlightHub, DJI GS Pro) onto mobile computing devices (smartphones, laptop, tablets) to effectively turn said devices into remote controls equipped with GUI mapping.
- 62. On information and belief, the portions of Defendants' products that allow the user to pilot the Defendants' products in accordance with a navigation algorithm as described in Paragraph 61, including DJI branded products made, marketed, used, sold, offered to sell, or imported by Defendants, are not staple articles or commodities of commerce suitable for substantial non-infringing use.
- 63. Willful Infringement: As set forth in paragraph 57 above, in accordance with 35 U.S.C. § 287(a), Defendants had constructive and actual notice of the existence of the '294 patent and have been aware of the '294 patent since at least February 11, 2015, when the United States Patent and Trademark Office cited the '294 patent to reject the patentability of Defendants' own patent.

- 64. On information and belief, IBM, a past predecessor in interest of the '294 patent, and Defendants engaged in discussions regarding the '294 patent, on or about October 16, 2017, if not earlier since the October 16, 2017 remarks referenced prior written exchanges between IBM and DJI. Therefore, Defendants also had actual knowledge of the '294 patent at least as of October 16, 2017. And yet, even with full knowledge of Daedalus Blue's patent rights (acquired through IBM), Defendants have continued to commit acts of infringement and have failed to cease their infringing activities. Because Defendants have been aware of the '294 patent, but acted despite an objectively high likelihood that their actions constituted infringement of a valid patent, Defendants' infringement has been, and continues to be, egregious and willful.
- 65. **Detailed Mapping of Direct Infringement:** On information and belief, with regard to the claim elements of the '294 patent, the DJI Mavic Series, Matrice Series, Phantom Series, Spark Series, Multispectral Series, and Inspire Series, as further laid out in Paragraph 30, function similarly to each other. Infringement of the '294 patent by these DJI drones and drone-related products is demonstrated below using the Phantom 4 Pro Series UAV (including V2.0) as an example. Method claims 1-11 of the '294 patent are representative of, and of similar scope to system claims 12-22 and computer program product claims 23-33 of the '294 patent.
- 66. Method claim 1 is representative of the alleged claims:
 - 1. A method for navigating an unmanned aerial vehicle ("UAV"), the method comprising:
 - receiving in a remote control device a user's selection of a GUI map pixel that represents a waypoint for UAV navigation, the pixel having a location on the GUI; mapping the pixel's location on the GUI to Earth coordinates of the waypoint; transmitting the coordinates of the waypoint to the UAV; reading a starting position from a GPS receiver on the UAV; and

piloting the UAV, under control of a navigation computer on the UAV, from the starting position to the waypoint in accordance with a navigation algorithm.

- 67. On information and belief, the Phantom 4 Pro Series UAV ("Phantom 4") performs a method for navigating an unmanned aerial vehicle ("UAV").
- 68. On information and belief, the Phantom 4 receives in a remote-control device a user's selection of a GUI map pixel that represents a waypoint for UAV navigation, the pixel having a location on the GUI. On information and belief, the Phantom 4 can utilize both the DJI GO 4 application and the DJI GS Pro application.

Remote Controller

Remote Controller Profile

The Phantom 4 Pro/Pro+ series remote controller is a multi-function wireless communication device that integrates a dual frequency video downlink system and the aircraft remote control system. The remote controller features a number of camera control functions, including photo/video capture and gimbal control. The battery level is displayed via LED indicators on the front panel of the remote controller.

For more stable and smooth video downlink, the Phantom 4 Pro/Pro+ remote controller uses Lightbridge technology. The Phantom 4 Pro/Pro+ remote controller uses the latest OcuSync technology, which also allows the Phantom 4 Pro+ V2.0 to connect with DJI Goggles series products wirelessly, offering a real-time aerial FPV experience. The Phantom 4 Pro+ series is equipped with a 5.5" screen to better adapt to outdoor shooting environments. It also has a built-in DJI GO 4 and various applications to support sharing your content anytime and anywhere.

User's Manual, DJI Phantom 4 Pro/Pro+ series at p. 36

Download the DJI GO 4 App

Be sure to use the DJI $GO^{\mathbb{I}M}$ 4 app or other apps compatible with DJI aircraft during flight. Scan the QR code on the right to download the latest version.

The Android version of the DJI GO 4 app is compatible with Android 4.4 or later. The iOS version of the DJI GO 4 app is compatible with iOS 9.0 or later.



* For increased safety, the flight is restricted to a height of 30 m and distance of 50 m when not connected or logged into the app during flight, including DJI GO 4 and all apps compatible with DJI aircraft.

User's Manual, DJI Phantom 4 Pro/Pro+ series at p. 2

Introduction

DJI GS Pro (also known as Ground Station Pro) is an iPad app designed for industrial applications including but not limited to, aerial imaging, architecture, precision agriculture, electrical inspections, search and rescue, safety control, and more. It provides easy mission planning through different methods such as tapping on the map, setting points using the aircraft, or importing files, and automated aircraft control during the planned mission. DJI GS Pro is compatible with the iPad product line and many DJI aircraft, flight controllers, cameras and accessories*.

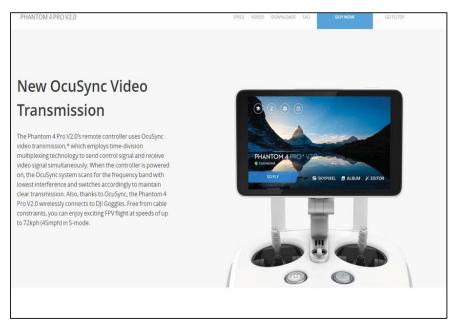
DJI GS Pro of v2.0 or above supports individual and team aircraft operations. Additionally, the subscription feature allows for flight, team, and project data to be backed up on the Cloud server.

3. Choose Point Set Method

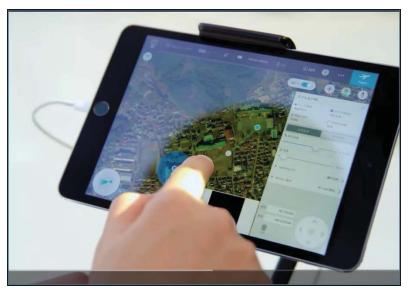
There are several methods for setting Virtual Fence boundaries, PhotoMap or 3D Map Area, building radius, and flight radius for 3D Map POI or flight waypoints. Once the points are confirmed, up to 99 waypoints can be included with the generated flight path. If the number of waypoints exceeds this, the mission will fail.



User's Manual, DJI GS Pro at p. 5 and p. 18



Phantom 4 Pro V2.0 remote-control device compatible with DJI GO 4 App, https://www.dji.com/phantom-4-pro-v2

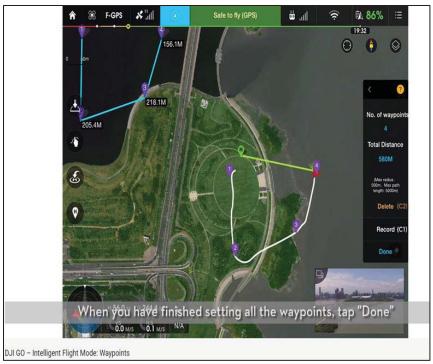


A remote-control device (iPad) compatible with Phantom 4 Pro V2.0 through the DJI GS Pro app, https://www.dji.com/ground-station-pro/info#downloads

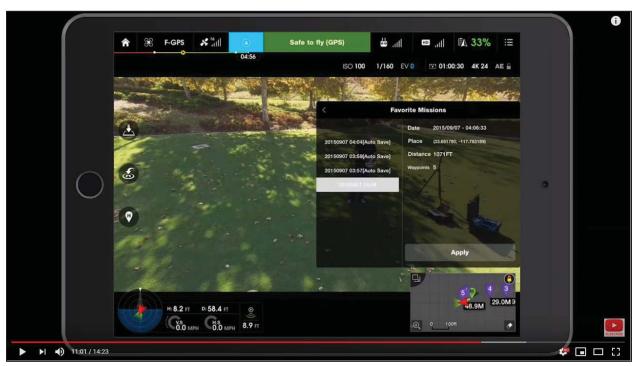
69. On information and belief, the Phantom 4 maps the pixel's location the GUI to Earth coordinates of the waypoint.



Remote-control device for use with DJI GO 4 App, https://store.dji.com/guides/dji-go-4-manual/



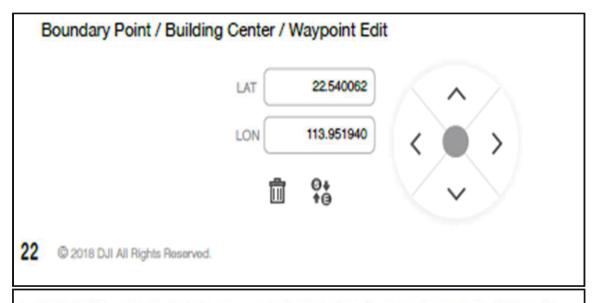
DJI's YouTube channel, https://www.youtube.com/watch?v=zvvbMxQ9Hj0



https://www.youtube.com/watch?v=qRrjvOi_dFA



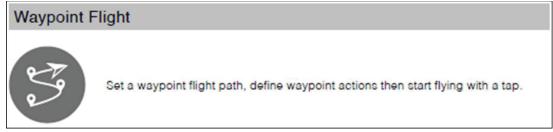
A remote-control device for use with DJI GS Pro App, https://www.dji.com/ground-station-pro/info#downloads



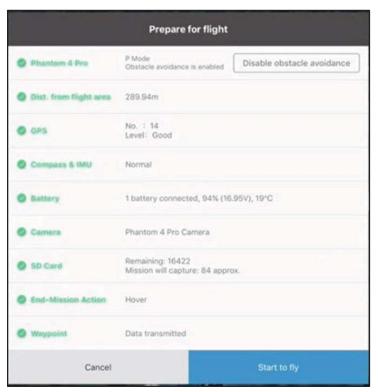
- a. Latitude & Longitude: Tap the box to input values. Tap the arrow keys on the right for fine tuning. Up and down adjust latitude while left and right adjust longitude.
- b. Delete: Select a point then tap this button to delete it.
- c. Reverse Path: This option will appear in Waypoint Flight missions. Tap it to swap the start and end points to reverse the flight path. "S" refers to the start point.

User's Manual, DJI GS Pro at p. 22-3

70. On information and belief, the Phantom 4 transmits the coordinates of the waypoint to the UAV.

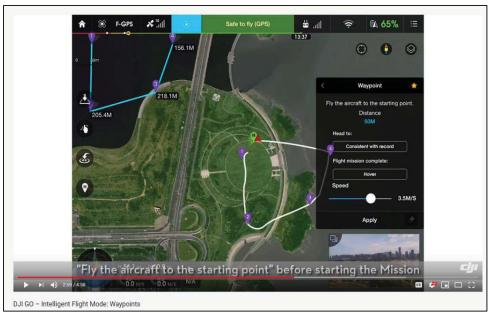


User's Manual, DJI GS Pro at p. 6



https://www.youtube.com/watch?v=1nuPypFQ3nI

71. On information and belief, the Phantom 4 reads a starting position from a GPS receiver on the UAV.



DJI's YouTube channel, https://www.youtube.com/watch?v=zvvbMxQ9Hj0

PhotoMap / 3D Map / Waypoint Flight

After starting, the aircraft will fly to the start point automatically. In 3D Map POI, the altitude of the start point will be the preset maximum altitude.

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User's Manual, DJI GS Pro at p. 20

72. On information and belief, the Phantom 4 is piloted under control of a navigation computer on-board, from the starting point to the waypoint in accordance with a navigation algorithm.

Aircraft

Flight Controller

The Phantom 4 Pro / Pro+ flight controller features several important upgrades. Safety modes include Failsafe and Return-to-Home. These features ensure the safe return of your aircraft if the control signal is lost. The flight controller can also save critical flight data from each flight to the on-board storage device. The new flight controller also provides increased stability and a new air braking feature.

Flight Mode

Three flight modes are available. The details of each flight mode are found below:

P-mode (Positioning): P-mode works best when the GPS signal is strong. The aircraft utilizes GPS, stereo Vision System and Infrared Sensing System to stabilize, avoid obstacles or track moving subjects. Advanced features such as TapFly and ActiveTrack are enabled in this mode.

When the Forward Vision System is enabled and lighting conditions are sufficient, the maximum flight attitude angle is 25° with a maximum flight speed of 31 mph (50 kph). When forward obstacle sensing are disabled, the maximum flight attitude angle is 35° and the maximum flight speed is 36 mph (58 kph).

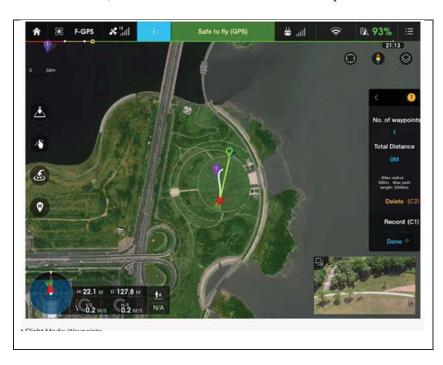
When the GPS signal is weak and lighting conditions are too dark for the Forward and Downward Vision Systems, the aircraft will only use its barometer for positioning to control altitude.

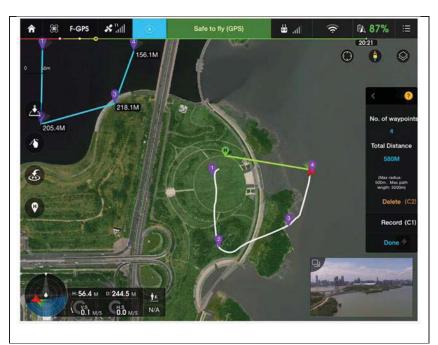
Note: P-mode requires larger stick movements to achieve high speeds.

S-mode (Sport): The handling gain values of the aircraft are adjusted to enhance aircraft maneuverability. The maximum flight speed of the aircraft is increased to 45mph (72kph). Note that Obstacle Sensing systems are disabled in this mode.

A-mode (Attitude): When neither the GPS nor the Vision System is available, the aircraft will only use its barometer for positioning to control the altitude.

User's Manual, DJI Phantom 4 Pro/Pro+ series at p. 13





DJI's YouTube channel, https://www.youtube.com/watch?v=zvvbMxQ9Hj0

- 73. On information and belief, Defendants' actions have and continue to constitute active inducement and contributory infringement of at least claims 1-33 of the '294 patent in violation of 35 U.S.C. § 271(b) and 271(c).
- 74. As a result of Defendants' infringement of at least claims 1-33 of the '294 patent, Plaintiff Daedalus Blue has suffered monetary damages in an amount yet to be determined, and will continue to suffer damages in the future unless Defendants' infringing activities are enjoined by this Court.
- 75. Defendants' wrongful acts have damaged and will continue to damage Plaintiff Daedalus Blue irreparably, and Plaintiff has no adequate remedy at law for those wrongs and injuries. In addition to its actual damages, Plaintiff Daedalus Blue is entitled to a permanent injunction restraining and enjoining Defendants and their respective agents, servants, and employees, and all person acting thereunder, in concert with, or on its behalf, from infringing at least claims 1-33 of the '294 patent.

COUNT III PATENT INFRINGEMENT OF THE '913 PATENT

- 76. Plaintiff Daedalus Blue repeats and realleges the above paragraphs, which are incorporated by reference as if fully restated herein.
- 77. Plaintiff Daedalus Blue is the owner of all rights, title, and interest in the '913 patent.
- 78. Plaintiff Daedalus Blue and predecessors in interest have never licensed any of the Defendants under the '913 patent, nor has Plaintiff Daedalus Blue otherwise authorized any of the Defendants to practice any part of the '913 patent.
- 79. The '913 patent is presumed valid under 35 U.S.C. §282.
- 80. The '913 patent relates to, among other things, navigation technology that enables a user to pilot a UAV using a socket to transmit downlink telemetry from the UAV to the user's remote control device and then uplink telemetry from the remote control device back to the UAV.
- 81. On information and belief, Defendants manufacture and market DJI branded products.
 Exhibit D.
- 82. On information and belief, Defendants distribute, sell, and market such DJI branded products, as well as remote controls, flight planning and control applications, parts, and accessories for such DJI branded products. **Exhibit E**.
- 83. **Direct Infringement:** On information and belief, Defendants have directly infringed and continue to directly infringe, either literally or under the doctrine of equivalents, one or more claims of the '913, including for example (but not limited to) at least method claims 1-15, system claims 16-30, and computer program product claims 31-45 of the '913 patent by making, using, selling, offering to sell, or importing without license or authority, Defendants' suite of drone and drone-related products, including, but not

limited to, at least DJI products that correspond to Defendants' UAVs and Defendants' Flight Control Components (*see* ¶ 30), without Plaintiff Daedalus Blue's authorization, in violation of 35 U.S.C. §271(a). *See* Exhibit F. A detailed infringement claim mapping is provided in paragraphs 95-103 below.

84. On information and belief, Defendants have been aware of the '913 patent since at least January 11, 2015. The '913 patent is well known in the industry – having been cited in at least 49 cited patents since its filing date, including in at least three of Defendants' own patents:

Patent Number	Patent Title
US9457915	Systems and methods for UAV docking
US10059467	Systems and methods for UAV docking
US9302783	Systems and methods for UAV docking

With this in mind, in accordance with 35 U.S.C. §287(a), Defendants had constructive and actual notice of the existence of the '913 patent and have been aware of the '913 patent since at least January 11, 2015, because on that date, the United States Patent and Trademark Office cited the '913 patent in a List of Referenced Cited by Examiner in connection with Defendants' own patent, U.S. Patent No. 9,302,783 (*italicized above*).

85. **Induced Infringement:** On information and belief, Defendants have and continue to promote, advertise, and instruct customers and potential customers about DJI products, such as Defendants' UAVs and Defendants' Flight Control Components (*see* ¶30), and how to use DJI branded products, including infringing uses. Defendants' promotion, advertising, and instruction efforts include, at a minimum, maintenance of its own website http://www.dji.com, as well as support via third party resellers. *See* **Exhibit G**. Defendants also provided applications for mobile computing devices, such as smartphones, laptops, and tablets, which allows consumers to use the infringing features

of the products. Such applications include, but is not limited to Defendants' Flight Control Components (*see* ¶30), which allow users to control the gimbal, camera, navigation and other aircraft functions of the infringing UAV products. On information and belief, Defendants engaged in these acts with the actual intent to cause the acts which they knew or should have known would induce actual infringement.

- 86. **Contributory Infringement:** On information and belief, Defendants knew or should have known that at least DJI branded model lines identified above in Paragraph 30 utilize at least three mission planning and UAV control applications implementing "Navigation Algorithms" that allow the user to control the Defendants' product by means of a remote control with GUI map pixels representing waypoints: (1) the DJI GO 4, (2) the DJI GS Pro, (3) DJI Terra, and (4) DJI FlightHub. Such navigation algorithms are especially made or especially adapted for use in an infringement of at least method claims 1-15, system claims 16-30, and computer program product claims 31-45 of the '913 patent and have no substantially non-infringing uses in these drone and drone-related products.
- 87. On information and belief, the portions of Defendants' products that allow the user to pilot the Defendants' products in accordance with a navigation algorithm as described in Paragraph 85, including DJI branded products made, marketed, used, sold, offered to sell, or imported by Defendants, are not staple articles or commodities of commerce suitable for substantial non-infringing use.
- 88. **Willful Infringement:** As set forth in paragraph 84 above, in accordance with 35 U.S.C. §287(a), Defendants had constructive and actual notice of the existence of the '913 patent and have been aware of the '913 patent since at least January 11, 2015, when the United

- States Patent and Trademark Office cited the '913 patent to reject the patentability of Defendants' own patent.
- 89. On information and belief, IBM, a past predecessor in interest of the '913 patent, and Defendants engaged in discussions regarding the '913 patent, on or about October 16, 2017, if not earlier since the October 16, 2017 remarks referenced prior written exchanges between IBM and DJI. Therefore, Defendants also had actual knowledge of the '913 patent at least as of October 16, 2017. And yet, even with full knowledge of Daedalus Blue's patent rights (acquired through IBM), Defendants have continued to commit acts of infringement and have failed to cease their infringing activities. Because Defendants have been aware of the '913 patent, but acted despite an objectively high likelihood that their actions constituted infringement of a valid patent, Defendants' infringement has been egregious, and continues to be, willful.
- 90. **Detailed Mapping of Direct Infringement:** On information and belief, with regard to the claim elements of the '913 patent, the DJI Mavic Series, Matrice Series, Phantom Series, Spark Series, Multispectral Series and Inspire Series, as further laid out in Paragraph 30, function similarly to each other. Infringement of the '913 patent by these DJI drones and drone-related products is demonstrated below using the Phantom 4 Pro Series UAV (including V2.0) as an example. Method claims 1-15 of the '913 patent are representative of, and similar in scope to system claims 16-30 and computer program product claims 31-45 of the '913 patent.
- 91. Method claim 1 is representative of the alleged claims:
 - 1. A method for navigating an Unmanned Aerial Vehicle (UAV), the method comprising:
 - receiving in a remote control device a user's selection of a GUI map pixel that represents a waypoint for UAV navigation, the pixel having a location on the GUI;

mapping the pixel's location on the GUI to Earth coordinates of the waypoint; receiving downlink telemetry, including a starting position from a GPS receiver on the UAV, from the UAV through a socket on the remote control device;

calculating a heading in dependence upon the starting position, the coordinates of the waypoint, and a navigation algorithm;

identifying flight control instructions for flying the UAV on the heading; and transmitting uplink telemetry, including the flight control instructions, through the socket to the UAV.

- 92. The Phantom 4 Pro Series UAV ("Phantom 4") performs a method for navigating an unmanned aerial vehicle ("UAV").
- 93. On information and belief, the Phantom 4 receives in a remote-control device a user's selection of a GUI map pixel that represents a waypoint for UAV navigation, the pixel having a location on the GUI. On information and belief, the Phantom 4 can utilize both the DJI GO 4 application and the DJI GS Pro application.

Remote Controller

Remote Controller Profile

The Phantom 4 Pro/Pro+ series remote controller is a multi-function wireless communication device that integrates a dual frequency video downlink system and the aircraft remote control system. The remote controller features a number of camera control functions, including photo/ video capture and gimbal control. The battery level is displayed via LED indicators on the front panel of the remote controller.

For more stable and smooth video downlink, the Phantom 4 Pro/Pro+ remote controller uses Lightbridge technology. The Phantom 4 Pro/Pro+ remote controller uses the latest OcuSync technology, which also allows the Phantom 4 Pro+ V2.0 to connect with DJI Goggles series products wirelessly, offering a real-time aerial FPV experience. The Phantom 4 Pro+ series is equipped with a 5.5" screen to better adapt to outdoor shooting environments. It also has a built-in DJI GO 4 and various applications to support sharing your content anytime and anywhere.

User's Manual, DJI Phantom 4 Pro/Pro+ series at p. 36

Download the DJI GO 4 App

Be sure to use the DJI GOTM 4 app or other apps compatible with DJI aircraft during flight. Scan the QR code on the right to download the latest version.

The Android version of the DJI GO 4 app is compatible with Android 4.4 or later. The iOS version of the DJI GO 4 app is compatible with iOS 9.0 or later.



* For increased safety, the flight is restricted to a height of 30 m and distance of 50 m when not connected or logged into the app during flight, including DJI GO 4 and all apps compatible with DJI aircraft.

User's Manual, DJI Phantom 4 Pro/Pro+ series at p. 2

Introduction

DJI GS Pro (also known as Ground Station Pro) is an iPad app designed for industrial applications including but not limited to, aerial imaging, architecture, precision agriculture, electrical inspections, search and rescue, safety control, and more. It provides easy mission planning through different methods such as tapping on the map, setting points using the aircraft, or importing files, and automated aircraft control during the planned mission. DJI GS Pro is compatible with the iPad product line and many DJI aircraft, flight controllers, cameras and accessories*.

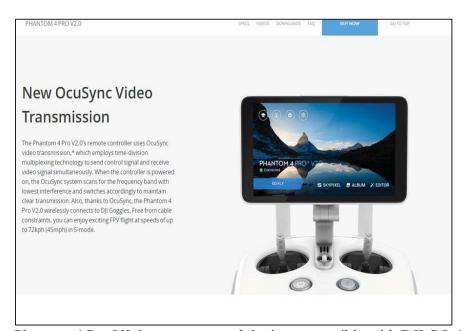
DJI GS Pro of v2.0 or above supports individual and team aircraft operations. Additionally, the subscription feature allows for flight, team, and project data to be backed up on the Cloud server.

3. Choose Point Set Method

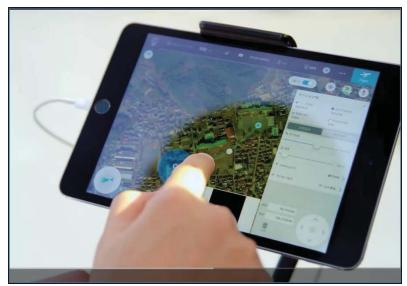
There are several methods for setting Virtual Fence boundaries, PhotoMap or 3D Map Area, building radius, and flight radius for 3D Map POI or flight waypoints. Once the points are confirmed, up to 99 waypoints can be included with the generated flight path. If the number of waypoints exceeds this, the mission will fail.



User's Manual, DJI GS Pro at p. 5 and p. 18



Phantom 4 Pro V2.0 remote-control device compatible with DJI GO 4 App, https://www.dji.com/phantom-4-pro-v2

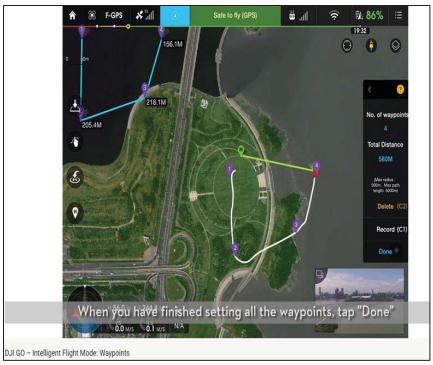


A remote-control device (iPad) compatible with Phantom 4 Pro V2.0 through the DJI GS Pro app, https://www.dji.com/ground-station-pro/info#downloads

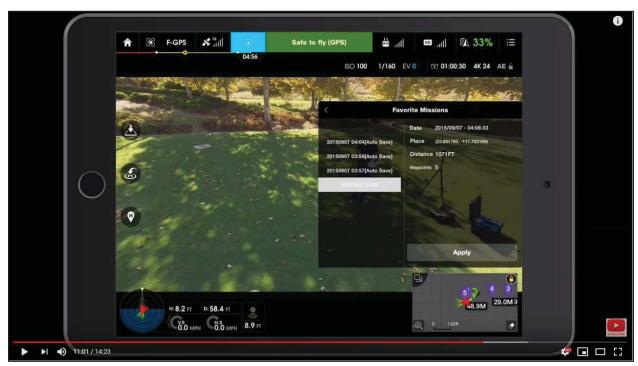
94. On information and belief, the Phantom 4 maps the pixel's location the GUI to Earth coordinates of the waypoint.



Remote-control device for use with DJI GO 4 App, https://store.dji.com/guides/dji-go-4-manual/



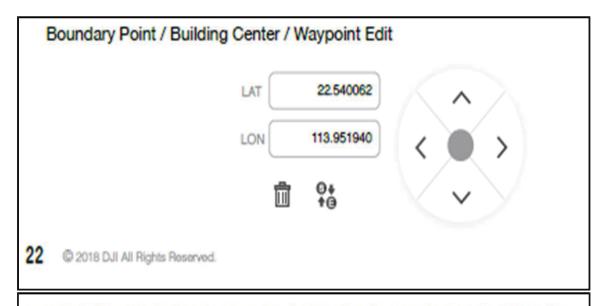
DJI's YouTube channel, https://www.youtube.com/watch?v=zvvbMxQ9Hj0



https://www.youtube.com/watch?v=qRrjvOi_dFA



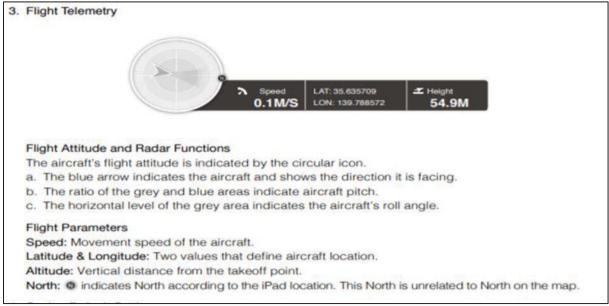
A remote-control device for use with DJI GS Pro App, https://www.dji.com/ground-station-pro/info#downloads



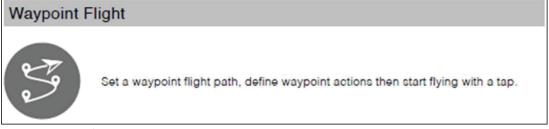
- a. Latitude & Longitude: Tap the box to input values. Tap the arrow keys on the right for fine tuning. Up and down adjust latitude while left and right adjust longitude.
- b. Delete: Select a point then tap this button to delete it.
- c. Reverse Path: This option will appear in Waypoint Flight missions. Tap it to swap the start and end points to reverse the flight path. "S" refers to the start point.

User's Manual, DJI GS Pro at p. 22-3

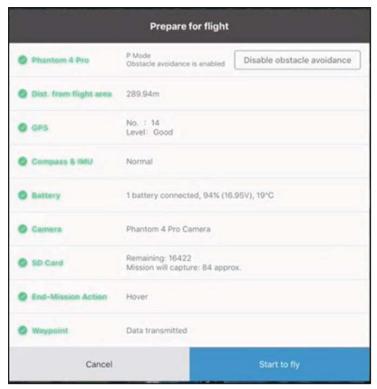
95. On information and belief, the Phantom 4 receives downlink telemetry, including a starting position from a GPS receiver on the UAV, from the UAV through a socket on a remote-control device.



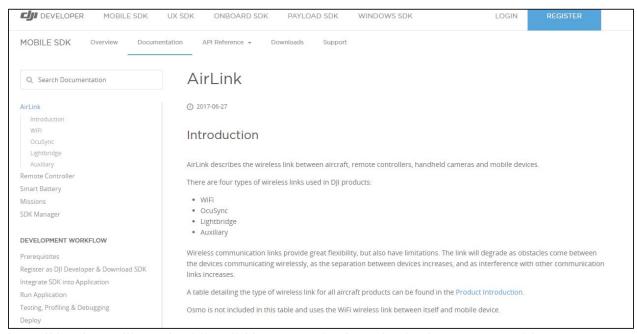
User's Manual, DJI GS Pro at p. 23



User's Manual, DJI GS Pro at p. 6



https://www.youtube.com/watch?v=1nuPypFQ3nI



https://developer.dji.com/mobile-sdk/documentation/introduction/component-guideairlink.html

96. On information and belief, the Phantom 4 calculates a heading in dependence upon the starting position, the coordinates of the waypoint, and a navigation algorithm.

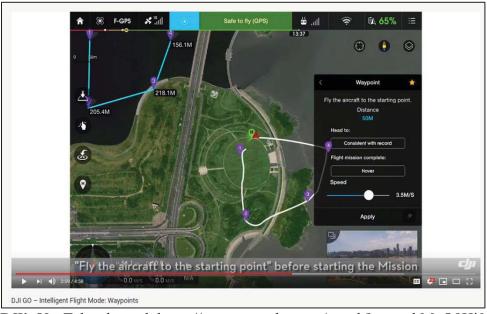
DJI GS PRO User Manual

3. Aircraft Heading

Course Aligned: The aircraft's nose is always aligned to the direction of the next two waypoints. Defined Per Point: Set aircraft heading at each waypoint in "Each Point" settings.

Manual: Users manually control the aircraft heading using the control sticks.

User's Manual, DJI GS Pro at p. 30



DJI's YouTube channel, https://www.youtube.com/watch?v=zvvbMxQ9Hj0

PhotoMap / 3D Map / Waypoint Flight

After starting, the aircraft will fly to the start point automatically. In 3D Map POI, the altitude of the start point will be the preset maximum altitude.

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User's Manual, DJI GS Pro at p. 20

Aircraft

Flight Controller

The Phantom 4 Pro / Pro+ flight controller features several important upgrades. Safety modes include Failsafe and Return-to-Home. These features ensure the safe return of your aircraft if the control signal is lost. The flight controller can also save critical flight data from each flight to the on-board storage device. The new flight controller also provides increased stability and a new air braking feature.

Flight Mode

Three flight modes are available. The details of each flight mode are found below:

P-mode (Positioning): P-mode works best when the GPS signal is strong. The aircraft utilizes GPS, stereo Vision System and Infrared Sensing System to stabilize, avoid obstacles or track moving subjects. Advanced features such as TapFly and ActiveTrack are enabled in this mode.

When the Forward Vision System is enabled and lighting conditions are sufficient, the maximum flight attitude angle is 25° with a maximum flight speed of 31 mph (50 kph). When forward obstacle sensing are disabled, the maximum flight attitude angle is 35° and the maximum flight speed is 36 mph (58 kph).

When the GPS signal is weak and lighting conditions are too dark for the Forward and Downward Vision Systems, the aircraft will only use its barometer for positioning to control altitude.

Note: P-mode requires larger stick movements to achieve high speeds.

S-mode (Sport): The handling gain values of the aircraft are adjusted to enhance aircraft maneuverability.
The maximum flight speed of the aircraft is increased to 45mph (72kph). Note that Obstacle Sensing systems are disabled in this mode.

A-mode (Attitude): When neither the GPS nor the Vision System is available, the aircraft will only use its barometer for positioning to control the altitude.

User's Manual, DJI Phantom 4 Pro/Pro+ series at p. 13

97. On information and belief, the Phantom 4 identifies flight control instructions for flying the UAV on the heading.

Aircraft

Flight Controller

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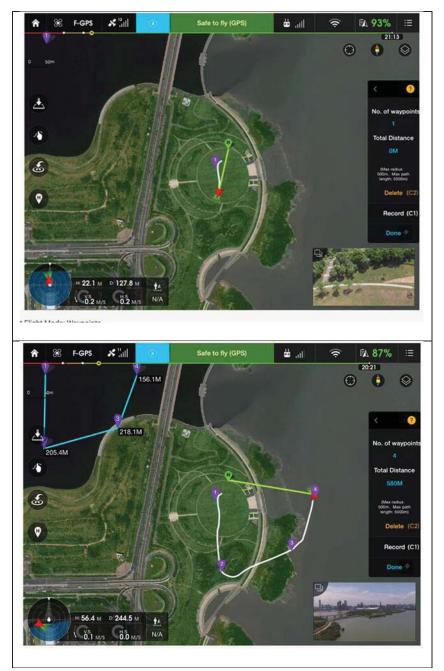
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A-mode (Attitude): When neither the GPS nor the Vision System is available, the aircraft will only use its barometer for positioning to control the altitude.

User's Manual, DJI Phantom 4 Pro/Pro+ series at p. 13



DJI's YouTube channel, https://www.youtube.com/watch?v=zvvbMxQ9Hj0

98. On information and belief, the Phantom 4 transmits uplink telemetry, including the flight control instructions, through the socket to the UAV.

3. Flight Telemetry



Flight Attitude and Radar Functions

The aircraft's flight attitude is indicated by the circular icon.

- The blue arrow indicates the aircraft and shows the direction it is facing.
- The ratio of the grey and blue areas indicate aircraft pitch.
- c. The horizontal level of the grey area indicates the aircraft's roll angle.

Flight Parameters

Speed: Movement speed of the aircraft.

Latitude & Longitude: Two values that define aircraft location.

Altitude: Vertical distance from the takeoff point.

North: @ indicates North according to the iPad location. This North is unrelated to North on the map.

Tap on the screen or set points using the aircraft to generate flight areas or routes.

1. New Mission

Tap the New Mission button on the left of the screen.



2. Choose Mission Type

Choose an appropriate mission type











3. Choose Point Set Method

There are several methods for setting Virtual Fence boundaries, PhotoMap or 3D Map Area, building radius, and flight radius for 3D Map POI or flight waypoints. Once the points are confirmed, up to 99 waypoints can be included with the generated flight path. If the number of waypoints exceeds this, the mission will fail.









Tap: Tap on the map to create a boundary point of an area, flight waypoint, or center of a building to be circled

Tapping the desired flight location on the map once will create a corresponding area or waypoint according to different types of mission.

Tapping in PhotoMap, Virtual Fence or 3D Map Area will create a rectangular flight zone around that point, while tapping in Waypoint Flight mission will create a single waypoint. Tap any point to select it and it will turn from white to blue. Drag the point to change the area shape or flight path. Drag ⊙ noto the map to add a point. To delete a selected point, tap ∰ in the bottom left corner of the parameter settings page.

Tapping in 3D Map POI will create two concentric circles centered by that point. The black

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DJI GS PRO User Manual

one indicates the circle of the building radius, and the blue one indicates the circle of the flight radius. Drag \bigoplus towards the middle to adjust the center circle. Drag the white dot on each circle to adjust its corresponding radius.

Aircraft: You can fly the aircraft to the desired position and set the location as a boundary point in Virtual Fence or 3D Map Area as a waypoint in Waypoint Flight mission, or set the building and flight radius calculated through several places.

- (f): In 3D Map POI, fly the aircraft to several positions around the building and tap the icon to select. At least two or more points are required to determine the radius of the center of the building. Tap 6 to finish setting the building radius. Next, fly the aircraft to the desired position and tap 1 to set the flight radius. In other missions, tap to set the aircraft position as a boundary point or a waypoint.
- 3: Tap to delete the last point.
- : Tap to finish after setting all the required points.

Aircraft (Record Altitude): This method can only be used for Waypoint Flight missions. The instructions are the same as "Aircraft" above. In addition, both position and altitude will be recorded. When performing the mission, the aircraft will fly the preset position and altitude.

The flight area will be generated according to the order the points were set.

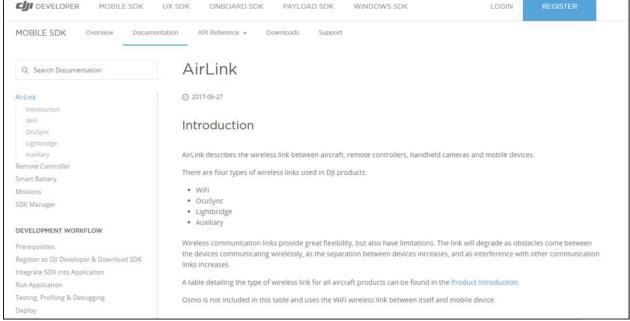
The area generated according to the order that the points were set cannot intersect otherwise a flight area cannot be generated. DJI GS Pro will decide if points can be used to generate a flight area. If not, the "Finish" button will be grayed out and cannot be tapped.

User's Manual, DJI GS Pro at p. 23 and p. 18-9

DJI GO 4 App

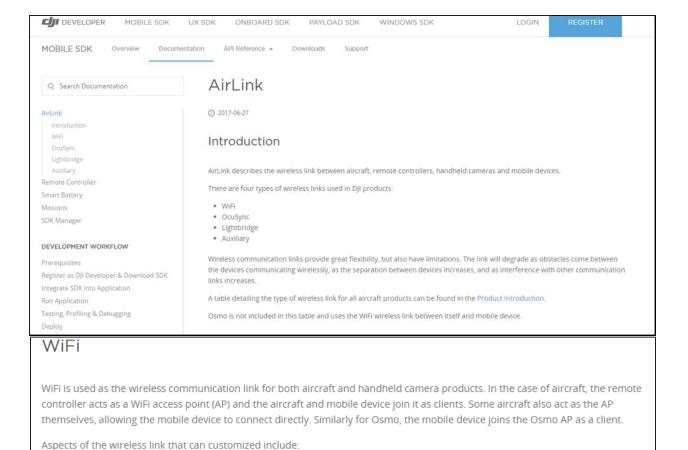
The DJI GO 4 app is a mobile application designed specifically for DJI equipment. Use this app to control the gimbal, camera, and other aircraft functions. The app features Equipment, Editor, SkyPixel and Me sections, which are used for configuring your aircraft, editing and sharing your photos and videos with others. It is recommended that you use a tablet for the best experience.

User's Manual, DJI Phantom 4 Pro/Pro+ series at p. 49



https://developer.dji.com/mobile-sdk/documentation/introduction/component-guideairlink.html

99. On information and belief, at least Defendants' Mobile SDK AirLink, which "describes the wireless link between aircraft, remote controllers, handheld cameras and mobile devices," operates as an end-point of a two-way communication link between two application programs running on a network. In other words, Defendant's Mobile SDK AirLink operates as a socket.



https://developer.dji.com/mobile-sdk/documentation/introduction/component-guide-airlink.html

SSIDPassword

• WiFi Frequency Band (Osmo Only)

OcuSync

Part of the Lightbridge family, DJI's newly developed OcuSync transmission system performs far better than Wi-Fi transmission at all transmission speeds. OcuSync also uses more effective digital compression and channel transmission technologies, allowing it to transmit HD video reliably even in environments with strong radio interference. Compared to traditional analog transmission, OcuSync can transmit video at 720p and 1080p – equivalent to a 4-10 times better quality, without a color cast, static interference, flickering or other problems associated with analog transmission. Even when using the same amount of radio transmission power, OcuSync transmits further than analog at 4.1mi (7km)

Before taking off, OcuSync will automatically scan the environment and choose the frequency band with the lowest interference, ensuring more stable video transmission. During a flight, it sends key flight parameters back for viewing in the SDK and supports a maximum download speed of 40Mb/s for photos and videos.

In use, this is the difference between smooth or interrupted transmission, short or long flight range, and short or long recovery times after interference or GPS signal loss. Additionally, since Wi-Fi uses a traditional protocol stack, it takes longer - from several seconds to tens of seconds – to get connected and to re-connect after signal loss But OcuSync uses Cross-Layer Protocol Design, it can establish or re-establish links within one second.

As well as point-to-point video transmission, OcuSync also supports wireless connections to multiple devices. For example, you can connect the DJI Goggles, remote controller, and Mavic wirelessly to OcuSync all at the same time. You can also add an additional remote so that you can control the Mavic with two remotes or share First Person View (FPV) videos.

Lightbridge

Lightbridge has been developed by DJI specifically for long range, robust aerial communication in the 2.4 GHz band, and is used as the link between remote controller and aircraft. It provides significantly more range than WiFi, with up to 5 km communication in some products.

Lightbridge has 8 selectable channels. Channel selection can either be done manually, or left to the radio to determine what channel has the least interference. Data rate and channel quality can be measured to understand how channel is performing.

Some remote controllers with Lightbridge wireless links also have a secondary video port. This port can be used to send the live stream in HDMI or SDI format to an external device.

Lightbridge Accessory

DJI also has a stand alone accessory product Lightbridge 2 that can be integrated into airframes such as the S1000. This product consists of a module that mounts on the aircraft, and a remote controller for ground control. The purpose of the product is to relay remote control commands to the aircraft, and relay telemetry and video data to the remote controller.

The accessory provides two additional features in the live video stream compared to ready-to-fly systems using Lightbridge technology:

- · Multiple video inputs on the aircraft can be combined into a picture in picture live video stream
- · An on-screen-display (OSD) mode overlays aircraft attitude information onto the live video stream

https://developer.dji.com/mobile-sdk/documentation/introduction/component-guide-airlink.html

Auxiliary

WiFi and Auxiliary wireless links are used simultaneously between aircraft and remote controllers. The auxiliary link is a low bandwidth, but very robust link that carries control information critical to aircraft operation only. The WiFi link is higher bandwidth but is less robust and therefore carries application information and the live video stream.

https://developer.dji.com/mobile-sdk/documentation/introduction/component-guideairlink.html

- 100. On information and belief, Defendants' actions have and continue to constitute active inducement and contributory infringement of at least claims 1-45 of the '913 patent in violation of 35 U.S.C. §271(b) and 271(c).
- 101. As a result of Defendants' infringement of at least claims 1-45 of the '913 patent,
 Plaintiff Daedalus Blue has suffered monetary damages in an amount yet to be
 determined, and will continue to suffer damages in the future unless Defendants'
 infringing activities are enjoined by this Court.
- Defendants' wrongful acts have damaged and will continue to damage Plaintiff
 Daedalus Blue irreparably, and Plaintiff has no adequate remedy at law for those wrongs
 and injuries. In addition to its actual damages, Plaintiff Daedalus Blue is entitled to a
 permanent injunction restraining and enjoining Defendants and their respective agents,
 servants, and employees, and all person acting thereunder, in concert with, or on its
 behalf, from infringing at least claims 1-45 of the '913 patent.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Daedalus Blue respectfully requests that this Court enter:

A. A judgment in favor of Plaintiff Daedalus Blue that Defendants have been and are infringing at least claims 1-18 of the '232 patent, claims 1-33 of the '294 patent, and claims 1-45 of the '913 patent pursuant to 35 U.S.C. §§ 271(a), 271(b) and/or 271(c);

- B. A preliminary and permanent injunction enjoining Defendants and their respective officers, directors, agents, servants, affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in concert or privity with any of them from infringing, inducing the infringement of, or contributing to the infringement of, at least claims 1-18 of the '232 patent, claims 1-33 of the '294 patent, and claims 1-45 of the '913 patent;
- C. A judgment awarding Plaintiff Daedalus Blue all damages adequate to compensate it for Defendants' infringement of the Daedalus Blue Patents, and in no event less than a reasonable royalty for Defendants' acts of infringement, including all pre-judgment and post-judgment interest at the maximum rate permitted by law, and including all past damages prior to filing this Complaint in accordance with 35 U.S.C. § 286, as a result of Defendants' infringement of at least claims 1-18 of the '232 patent, claims 1-33 of the '294 patent, and claims 1-45 of the '913 patent.
- D. An award of enhanced damages as a result of SZ DJI Technology Co., Ltd.'s and DJI Europe B.V.'s willful infringement of at least claims 1-18 of the '232 patent, claims 1-33 of the '294 patent, and claims 1-45 of the '913 patent, after being apprised of these patents, as provided under 35 U.S.C. § 284;
- E. An assessment of costs, including reasonable attorney fees pursuant to 35 U.S.C. § 285, and prejudgment interest against Defendants; and
- F. Such other and further relief as this Court may deem just and proper.

JURY TRIAL DEMANDED

Pursuant to FED. R. CIV. P. 38, Plaintiff Daedalus Blue hereby demands a trial by jury on all issues so triable.

Dated: January 31, 2020 Respectfully submitted,

/s/ Thomas M. Dunlap

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David Ludwig (Admitted W.D. Tex./VA Bar No. 73157)
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